



Technology & Development Status Report

Engineering Program

FY 2009



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PROJECT: **Soil Stabilizer Selection Guide** **CENTER:** [SDTDC](#)

Number: 3E31L07 **PROGRAM LEADER:** [Alan Yamada](#)

SPONSOR: [WO-ENG](#) **Project Leader:** Charles Aldrich

Proposer: Gordon Keller

PROJECT OBJECTIVES

A number of soil stabilization techniques and materials exist to improve the properties, particularly strength, of roadbed subgrades. Generally, the stabilizers are mixed into the upper few inches of soil and then compacted. They then provide a low -grade pavement like surface. Stabilization of the surface of low volume roads (LVR's) can reduce the need for frequent blading; act as a dust palliative; reduce sedimentation runoff into waterways; provide a smoother travel surface; and reduce the need a thick gravel surface. Stabilizers have been found to be particularly useful for roads in areas with clay-rich soils, however areas with other soils may benefit also. Two previous reports on stabilizers ("Non-Standard Stabilizers," by Douglas Scholen, [FHWA](#) 1992 and "Stabilization with Standard and Non-Standard Stabilizers," by Pete Bolander, Forest Service [Engineering Field Notes](#), 1995), reviewed stabilizers, however new products have been developed and new advances have occurred in the intervening years. The current project is meant to update the previous work and prepare a Users Guide to help practitioners select the best product and techniques. The project duration is two-years.

The project will include a literature search of recent advances in the use of stabilizers for low volume roads, typical of those in forests. The stabilizers to be considered fall into the general categories of: various salts, petroleum, organic non-petroleum, electrochemical, synthetic polymer, inorganic clay materials, soil cement, and fiber reinforced soil. Past and current users of the products will be contacted to mine their experiences and obtain qualitative and quantitative information on the products' effectiveness. The users and others with experience with stabilizers include forest service personnel, especially those in southern states with clay soils; DOT's with prevalent clay rich soils such as Texas; Universities; World Bank; and US Agency for International Development which has recent experience in Central and South America.

Changes to objectives:

SIGNIFICANT ACCOMPLISHMENTS

- The literature search has been completed and additional leads developed to gain information on various stabilizers. An outline for the report has been drafted. Portions of report are prepared with draft projected for August 2004.

Output:

Planned: A Users Guide which updates the previous reports will be prepared to help practitioners select the best product and techniques. Information on suppliers of stabilization products will be included to assist the practitioners.

Actual:
